What is claimed is:

1. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers in a transverse direction; and

attaching a permeable transport web of staple fibers to the first reinforcing fibers such that the portion of the first reinforcing fibers oriented in the direction transverse comprises at least 40% of a volume of materials comprising the reinforcing structure.

2. The method of claim 1 comprising arranging the plurality of first reinforcing fibers such that the portion of the first reinforcing fibers oriented in the direction transverse to the pull direction comprises at least 50% of the volume of the materials comprising the reinforcing structure.

3. The method of claim 1 comprising arranging the first reinforcing fibers into one or more overlapping layers of first reinforcing fibers.

4. The method of claim 1 comprising preparing the staple fibers to have a length of about ½ inch to about 4 inches.

5. The method of claim 1 comprising preparing the staple fibers to have a length of about 0.01 inch to about 12 inches.

6. The method of claim 1 comprising preparing the staple fibers to have a weight of about 60 grams per square meter to about 300 grams per square meter before attachment to the first reinforcing fibers.

7. The method of claim 1 comprising preparing the staple fibers to have a weight of about 10 grams per square meter to about 1200 grams per square meter before attachment to the first reinforcing fibers.

8. The method of claim 1 comprising preparing the permeable transport web from heat-fusible fibers.

9. The method of claim 1 comprising preparing the permeable transport web from at least two different polymeric fibers each with different glass transition temperature.

10. The method of claim 9 wherein the at least two polymeric fibers comprise a glass transition temperature of about 350°F and about 270°F, respectively.

11. The method of claim 1 comprising preparing the permeable transport web from a plurality of first polymeric fibers comprising a first glass transition temperature, and a plurality of bi-component fiber wherein a first component comprises the first glass transition temperature, and a second component comprising a second glass transition temperature less than the first glass transition temperature.

12. The method of claim 11 wherein the bi-component fibers comprise a core-sheath configuration.

13. The method of claim 1 wherein the reinforcing structure comprises in-plane mechanical and directional stability.

14. The method of claim 1 comprising randomly entangling at least a portion of fibers in the permeable transport web with the first reinforcing fibers.

15. The method of claim 1 comprising thermally bonding at least a portion of fibers in the permeable transport web with the first reinforcing fibers.

16. The method of claim 1 comprising attaching the first reinforcing fibers in a spaced-apart configuration with a continuous stitching fiber.

17. The method of claim 16 wherein the stitching fiber comprises glass fibers, natural fibers, carbon fibers, metal fibers, ceramic fibers, synthetic or polymeric fibers, composite fibers including one or more components of glass, natural materials, metal, ceramic, carbon, and/or synthetics components, or a combination thereof.

18. The method of claim 1 comprising applying a binder to the permeable transport web and the first reinforcing fibers.

19. The method of claim 18 wherein the binder comprises one or more of a specialized latex binder diluted in a water carrier, a polyvinyl acetate emulsion, or a crosslinking polyvinyl acetate emulsion.

20. The method of claim 1 comprising forming a plurality of perforations through the permeable transport web and between the first reinforcing fibers.

21. The method of claim 1 comprising preparing the permeably reinforcing sheet with a permeability of at least 180 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

22. The method of claim 1 comprising preparing the permeably reinforcing sheet with a permeability of about 300 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

23. The method of claim 1 comprising preparing the permeably reinforcing sheet with a permeability of more than 350 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

24. The method of claim 1 comprising preparing the permeably reinforcing sheet with a circular bending stiffness of at least about 4 Newtons as measured according to the procedure of ASTM D4032-94.

25. The method of claim 1 comprising preparing the permeably reinforcing sheet with a circular bending stiffness in a range of at least 4 Newtons to about 15 Newtons as measured according to the procedure of ASTM D4032-94.

26. The method of claim 1 comprising preparing the permeably reinforcing sheet with a thickness of about 0.004 inches to about 0.020 inches.

27. The method of claim 1 comprising preparing the permeably reinforcing sheet with a thickness of about 0.010 inches to about 0.012 inches.

28. The reinforcement structure of claim 1 comprising preparing the permeably reinforcing sheet with a tensile strength in the transverse direction of about 200 lbs/inch as measured using the procedure of ASTM D76-99.

29. The reinforcement structure of claim 1 comprising preparing the permeably reinforcing sheet with a tensile strength in the pull direction of at least 6 lbs/inch as measured using the procedure of ASTM D76-99.

30. The method of claim 1 comprising selecting the first reinforcing fibers from a group consisting of glass fibers, natural fibers, carbon fibers, metal fibers, ceramic fibers, synthetic or polymeric fibers, composite fibers including one or more components of glass, natural materials, metal, ceramic, carbon, and/or synthetics components, or a combination thereof.

31. The method of claim 1 comprising preparing the first reinforcing fibers with at least one polymeric component.

32. The method of claim 1 comprising coating the first reinforcing fibers with a surface treatment including an organosilane agent.

33. The reinforcement structure of claim 32 wherein the organosilane agent comprises one or more families of a cationic amino-functional

silane, Tris (2- methoxyethoxyvinylsilane), or 3-methacryloxypropyltrimethoxysilane.

34. The method of claim 1 comprising arranging the first reinforcing fibers in a direction about 90° +/- 10° relative to the pull direction.

35. The method of claim 1 comprising arranging the first reinforcing fibers in a direction about 90° +/- 5° relative to the pull direction.

36. The method of claim 1 comprising arranging substantially all of the first reinforcing fibers to extend continuously across a width of the reinforcing structure.

37. The method of claim 1 comprising attaching a plurality of permeable transport webs to the first reinforcing fibers.

38. The method of claim 1 comprising arranging a plurality of second reinforcing fibers at one or more acute angles relative to the pull direction.

39. The method of claim 1 comprising arranging a plurality of second reinforcing fibers at a first acute angle relative to the pull direction and arranging a plurality of third reinforcing fibers at a second acute angle that is the negative of the first acute angle.

40. The method of claim 39 comprising arranging a plurality of fourth reinforcing fibers in the pull direction.

41. The method of claim 39 comprising locating the first reinforcing fibers between the second and third reinforcing fibers.

42. The method of claim 1 comprising the steps of:

arranging a plurality of second reinforcing fibers at a first acute angle relative to the pull direction;

arranging a plurality of third reinforcing fibers at a second acute angle that is the negative of the first acute angle; and

arranging a plurality of fourth reinforcing fibers generally in the pull direction.

43. The method of claim 42 comprising randomly entangling at least a portion of fibers in the permeable transport web with one or more of the first, second, third or fourth reinforcing fibers.

44. The method of claim 42 comprising thermally bonding at least a portion of fibers in the permeable transport web with one or more of the first, second, third or fourth reinforcing fibers.

45. The method of claim 42 comprising stitching the first reinforcing fibers to one or more of the permeable transport web, the second reinforcing fibers, the third reinforcing fibers, and the fourth reinforcing fibers.

46. The method of claim 42 comprising applying a binder to the permeable transport web and to one or more of the first, second, third or fourth reinforcing fibers.

47. The method of claim 42 comprising preparing one or more of the first, second, third or fourth reinforcing fibers with a polymeric component.

48. The method of claim 42 comprising locating the first reinforcing fibers between the second and third reinforcing fibers and the fourth reinforcing fibers.

49. The method of claim 42 comprising preparing the first, second, third or fourth reinforcing fibers as discrete layers.

50. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers generally in a transverse direction;

preparing a permeably reinforcing sheet comprising a plurality of first polymeric fibers comprising a first glass transition temperature and a plurality of bi-component fiber wherein a first component comprises the first glass transition temperature and a second component comprises a second glass transition temperature less than the first glass transition temperature; and

attaching a permeable transport web to the first reinforcing fibers.

51. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers in a transverse direction relative to the pull direction; and

thermally bonding a permeably reinforcing sheet to the first reinforcing fibers so that the reinforcing structure comprises a permeability of at least 180 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

52. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers oriented in a transverse direction; and

attaching a permeable transport web of staple fibers to the first reinforcing fibers such that a ratio of a modulus of elasticity of the reinforcing structure in the transverse direction relative to a modulus of elasticity in the pull direction comprises at least 1.2.

53. The method of claim 52 wherein the ratio of the modulus of elasticity of the reinforcing structure in the transverse direction relative to the modulus of elasticity in the pull direction comprises at least 1.5.

54. The method of claim 52 wherein the ratio of the modulus of elasticity of the reinforcing structure in the transverse direction relative to the modulus of elasticity in the pull direction comprises at least 3.

55. The method of claim 52 wherein the ratio of the modulus of elasticity of the reinforcing structure in the transverse direction relative to the modulus of elasticity in the pull direction comprises at least 5.

56. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of non-overlapping first reinforcing fibers in a transverse direction; and

attaching a permeable transport web of staple fibers to the first reinforcing fibers such that the portion of the first reinforcing fibers extending in a transverse direction comprises at least 30% of a volume of materials comprising the reinforcing structure.

57. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers at 45° (+/- 15°) relative to the pull direction;

arranging a plurality of second reinforcing fibers at -45° (+/- 15°) relative to the pull direction; and

attaching a permeable transport web of staple fibers attached to the first and second reinforcing fibers such that the first and second reinforcing fibers comprises at least 30% of a volume of materials comprising the reinforcing structure.

58. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers at 60° (+/- 15°) relative to the pull direction;

arranging a plurality of second reinforcing fibers at -60° (+/- 15°) relative to the pull direction; and

attaching a permeable transport web of staple fibers attached to the first and second reinforcing fibers such that the first and second reinforcing fibers comprises at least 30% of a volume of materials comprising the reinforcing structure.

59. A method of preparing a reinforcing structure for use in manufacture a molded part where the reinforcing structure is located in a die having a longitudinal axis, the method comprising the steps of:

arranging a plurality of first reinforcing fibers in a transverse direction; and

attaching a permeable transport web of staple fibers to the first reinforcing fibers such that the portion of the first reinforcing fibers oriented in the direction transverse comprises at least 40% of a volume of materials comprising the reinforcing structure.

60. A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die in a continuous longitudinal pull direction, the method comprising the steps of:

arranging a plurality of first reinforcing fibers in a transverse direction continuously across a width of the reinforcing structure; and

attaching a permeable transport web of staple fibers to the first reinforcing fibers.

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